

Serial No.: 09/504,631

Attorney Docket No.: 00P07463

REMARKS

Upon entry of the instant amendment, claims 1-5, 7, and 9-13 are pending. Claims 1, 5, 7, 9, and 13 have been amended to more particularly point out Applicants' invention.

Claims 1, 9, and 13 have been rejected under 35 U.S.C. §102(e) as being anticipated by Dobson et al., U.S. Patent No. 6,377,683 ("Dobson"). In order for there to be anticipation, each and every element of the claimed invention must be present in a single prior reference. Applicants respectfully submit that the claimed invention is not taught, suggested, or implied by Dobson.

As discussed in the Specification, prior echo cancellation system typically do not compensate for multiple far end echo sources. The present invention, however, provides a system and method for determining and compensating for far end echo sources and, in certain embodiments, multiple sources.

Thus, a modem according to one implementation of the present invention includes an echo canceller adapted to determine locations of multiple far end echo sources. A training signal at a predetermined modem training frequency is sent from the modem to the second modem in the link. The return signal is then sampled by the sending modem. Any far end echoes manifest themselves as sine waves at the modem training frequency, delayed in time. The time difference if intervals between the peak of the training signal and the echo signals are timed to determine the echo delay. The echo delay is then used to compensate for the echo when transmissions occur.

Thus, claim 1 has been amended to recite "a timing unit adapted to identify delays of said plurality of echo components by timing intervals between peaks;" claim 9 has been amended to recite "identifying delays of a plurality of far end echo components by timing intervals between peaks;" and claim 13 has been amended to recite "determining intervals between peaks in said return signal."

In contrast, Dobson does not appear to time intervals between peaks in a return

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signal component or include a timing unit for such a purpose. Instead, Dobson performs a spectral analysis on an outgoing signal and an incoming signal to determine an echo. However, being a frequency domain implemented system, Dobson does not time the intervals between peaks. As such, the Examiner is respectfully requested to reconsider and withdraw the rejection.

Claims 2-5, 7, and 10-12 have been rejected under 35 U.S.C. 103(a) as being unpatentable over Dobson in view of Knittle et al., U.S. Patent No. 5,761,638 ("Knittle"). Applicants respectfully submit that the claimed invention is not taught, suggested, or implied by Dobson or Knittle, either singly or in combination. Dobson has been discussed above. Knittle is relied on for allegedly teaching determining a time delay by measuring an elapsed time between "the original chirp signal [a square pulse] and the occurrence of the largest peak in the $\sin(x)/x$ [a sinc function] pattern..."

Claim 5 has been amended to recite "said determining delays comprising timing intervals between peaks;" and claim 7 has been amended to recite "said identifying means including means for timing delays between peaks."

As discussed above, Dobson does not determine a time delay between a primary signal and a plurality of far end echo signals, by timing an interval between peaks, as generally recited in the claims at issue. Applicants further note that each of the claims at issue recites a "sinusoid" or a "training sinusoid." Knittle provides merely a chirp signal, which is filtered to the sinc function. Knittle does not relate, however, to providing training sinusoids for delay detection, as generally recited in the claims at issue.

As such, the Examiner is respectfully requested to reconsider and withdraw the rejection.

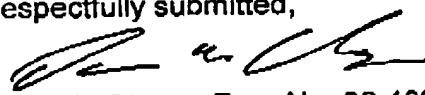
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For all of the above reasons, Applicants respectfully submit that the application is in condition for allowance, which allowance is earnestly solicited.

PLEASE MAIL CORRESPONDENCE TO: Respectfully submitted,

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